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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,940	09/25/2003	Sanjay D. Kamat	S. KAMAT 3-5	2055
47394	7590	03/17/2011	EXAMINER	
HITT GAINES, PC ALCATEL-LUCENT PO BOX 832570 RICHARDSON, TX 75083			BILGRAMI, ASGHAR H	
			ART UNIT	PAPER NUMBER
			2443	
			NOTIFICATION DATE	DELIVERY MODE
			03/17/2011	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@hittgaines.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/670,940	<b>Applicant(s)</b> KAMAT ET AL.	
	<b>Examiner</b> ASGHAR BILGRAMI	<b>Art Unit</b> 2443	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelavin et al (U.S.6,393,486) and Feldmann (U.S.Pub No. 2002/0021675 A1).

As per claims 1 Pelavin disclosed for user with a path vector routing protocol {Border gateway Protocol (**BGP is properly classified as a path vector protocol**)}, system for increasing alternative route convergence speed, comprising: a router information base (RIB) data receiver of border gateway router, associated with a network, that receives RIB data (col.23, lines 53-67 & col.24, lines 1-11, **RIB is also called routing table**) including: an update of an active route to a domain in said network that causes said active route to become a withdrawn route as a result of said active route being lost (col.39, lines 45-67 & col.40, lines 1-29). Although Pelavin disclosed that assigning loopback addresses to a router {Autonomous System} is a common technique through which a host can connect to the router; an advantage of a loopback address over the address of a physical port, is that a **"loopback cannot fail"** (col.36, lines 22-43).

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However Pelavin did not explicitly disclose indications, based on loopback addresses associated with nodes through which said withdrawn route passed, of a reachability of said each of said nodes; and route disqualification logic of said border gateway router, which is associated with said RIB data receiver and which is configured to disqualify alternative routes to said domain based on said indications prior to an alternative route convergence process, wherein said domain is thereby considered unreachable by said process and therefore not considered by said process. Although Pelavin disclosed that assigning loopback addresses to a router {Autonomous System} is a common technique through which a host can connect to the router; an advantage of a loopback address over the address of a physical port, is that a **"loopback cannot fail"** (col.36, lines 22-43). However Pelavin did not explicitly disclose an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each of said nodes, and disqualifies alternative routes to said domain based on said indications prior to an alternative route convergence process. In the same filed of endeavor Feldmann disclosed an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each of said nodes and route disqualification logic of said border gateway router, associated with said RIB data receiver, that disqualifies alternate routes to said domain based on said indication prior to an alternative route convergence process {prior to the final selection of a route} (paragrapah.36) {Examiner has interpreted that this limitation as

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basically describing that the alternate routes to a domain are disqualified before they are selected}. {Feldmann is discloses that the Autonomous System (AS) {e.g. collection of routers etc} {before alternate route convergence} learns about destination prefixes via dynamic routing protocols, such as BGP. BGP is a distance vector protocol that constructs paths by successively propagating reachability information (I.E advertisements). Each BGP advertisement concerns a particular prefix and includes a list of ASes (nodes) along the path (paragraph.20 of applicant's specification). BGP policies can filter unwanted advertisements (I.E "disqualifying alternative routes") and assign local preferences based on variety of attributes. Autonomous Systems (AS) may employ techniques such as route reflectors and confederation to avoid overhead. Attributes include originating router of a BGP session and remote end point which can is identified by IP address which may correspond to a particular interface or Loopback address. Examiner notes that this filtering (I.E disqualification) is done prior to selecting the best route. Only then (I.E after all the appropriate information is received and policies have been applied to the advertisements), the router executes the BGP decision process to select the best route}, wherein said domain is thereby considered unreachable by the said process and therefore not considered by said process (Paragraphs.32 and 36) {This newly added limitation adds nothing new to the claim language and is merely describing the obvious end result which happens when a domain is disqualified I.E considered unreachable in RIB}.

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the loopback address functionality as disclosed by

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Feldmann in the system for increasing alternative route convergence speed disclosed by Pelvain in order to make the border gateway router more resilient resulting in a more stable and robust routing system that mitigates congestion.

3. As per claim 8 Pelavin disclosed For use with a path vector routing protocol {Border gateway Protocol (**BGP is properly classified as a path vector protocol**)}, a method of increasing alternative network route convergence speed, comprising: receiving RIB data (col.23, lines 53-67 & col.24, lines 1-11, **RIB is also called routing table**) including: an update of an active route to a domain in said network that causes said active route to become a withdrawn route as a result of said active route being lost (col.39, lines 45-67 & col.40, lines 1-29). Although Pelavin disclosed that assigning loopback addresses to a router {Autonomous System} is a common technique through which a host can connect to the router; an advantage of a loopback address over the address of a physical port, is that a **"loopback cannot fail"** (col.36, lines 22-43). However Pelavin did not explicitly disclose indications, based on loopback addresses associated with nodes through which said withdrawn route passed, of a reachability of said each of said nodes; and route disqualification logic, which is associated with said RIB data receiver and which is configured to disqualify alternative routes to said domain based on said indications prior to an alternative route convergence process, wherein said domain is thereby considered unreachable by said process and therefore not considered by said process. Although Pelavin disclosed that assigning loopback addresses to a router {Autonomous System} is a common technique through which a

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host can connect to the router; an advantage of a loopback address over the address of a physical port, is that a **"loopback cannot fail"** (col.36, lines 22-43). However Pelavin did not explicitly disclose an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each of said nodes, and disqualifies alternative routes to said domain based on said indications prior to an alternative route convergence process. In the same filed of endeavor Feldmann disclosed an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each of said nodes and route disqualification logic, associated with said RIB data receiver, that disqualifies alternate routes to said domain based on said indication prior to an alternative route convergence process {prior to the final selection of a route} (paragrapah.36) {Examiner has interpreted that this limitation as basically describing that the alternate routes to a domain are disqualified before they are selected}. {Feldmann is discloses that the Autonomous System (AS) {e.g. collection of routers etc} {before alternate route convergence} learns about destination prefixes via dynamic routing protocols, such as BGP. BGP is a distance vector protocol that constructs paths by successively propagating reachability information (I.E advertisements). Each BGP advertisement concerns a particular prefix and includes a list of ASes (nodes) along the path (paragraph.20 of applicant's specification). BGP policies can filter unwanted advertisements (I.E "disqualifying alternative routes") and assign local preferences

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based on variety of attributes. Autonomous Systems (AS) may employ techniques such as route reflectors and confederation to avoid overhead. Attributes include originating router of a BGP session and remote end point which can be identified by IP address which may correspond to a particular interface or Loopback address. Examiner notes that this filtering (I.E disqualification) is done prior to selecting the best route. Only then (I.E after all the appropriate information is received and policies have been applied to the advertisements), the router executes the BGP decision process to select the best route}, wherein said domain is thereby considered unreachable by the said process and therefore not considered by said process (Paragraphs.32 and 36) {This newly added limitation adds nothing new to the claim language and is merely describing the obvious end result which happens when a domain is disqualified I.E considered unreachable in RIB}.

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the loopback address functionality as disclosed by Feldmann in the method for increasing alternative route convergence speed disclosed by Pelvain in order to make the border gateway router more resilient resulting in a more stable and robust routing system that mitigates congestion.

4. As per claims 15 Pelavin disclosed a border gateway router, comprising: at least three network interfaces {figure 11 shows at least three or more routers R1 through R6}; routing table memory that contains a table of active routes ; routing circuitry, coupled to said at least three network interfaces and said routing table memory (col.9, lines 64-67



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& col.10, lines 1-32), that routes packets among said at least three network interfaces according to a path vector routing protocol {Border gateway Protocol (**BGP**) **is properly classified as a path vector protocol**} based on addresses contained in said at least three network interfaces and said table of active routes; route optimization circuitry, coupled to said routing table memory (Figures 50-52A), that loads said active routes into said routing table memory based on an analysis of router information base (RIB) data (col.23, lines 53-67 & col.24, lines 1-11, **RIB is also called routing table**); a RIB data receiver, coupled to said route optimization circuitry, that receives RIB data including: an update of an active route to a domain in said network that causes said active route to become a withdrawn route as a result of said active route being lost (col.39, lines 45-67 & col.40, lines 1-29). Although Pelavin disclosed that assigning loopback addresses to a router {Autonomous System} is a common technique through which a host can connect to the router; an advantage of a loopback address over the address of a physical port, is that a **"loopback cannot fail"** (col.36, lines 22-43). However Pelavin did not explicitly disclose an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each of said nodes, and disqualifies alternative routes to said domain based on said indications prior to an alternative route convergence process. In the same filed of endeavor Feldmann disclosed an active route to a domain becoming a withdrawn route on an indication based on loopback address associated with the nodes {autonomous systems} through which the said withdrawn route passed, of a reachability of said each

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of said nodes and route disqualification logic, associated with said RIB data receiver, that disqualifies alternate routes to said domain based on said indication prior to an alternative route convergence process {prior to the final selection of a route}

(paragrapah.36) {Examiner has interpreted that this limitation as basically describing that the alternate routes to a domain are disqualified before they are selected}.

{Feldmann is discloses that the Autonomous System (AS) {e.g. collection of routers etc}

{before alternate route convergence} learns about destination prefixes via dynamic

routing protocols, such as BGP. BGP is a distance vector protocol that constructs paths

by successively propagating reachability information (I.E advertisements). Each BGP

advertisement concerns a particular prefix and includes a list of ASes (nodes) along the

path (paragraph.20 of applicant's specification). BGP policies can filter unwanted

advertisements (I.E "disqualifying alternative routes") and assign local preferences

based on variety of attributes. As may employ techniques such as route reflectors and

confederation to avoid overhead. Attributes include originating router of a BGP session

and remote end point which can is identified by IP address which may correspond to a

particular interface or Loopback address. Examiner notes that this filtering (I.E

disqualification) is done prior to selecting the best route. Only then (I.E after all the

appropriate information is received and policies have been applied to the

advertisements), the router executes the BGP decision process to select the best

route), wherein said domain is thereby considered unreachable by the said process and

therefore not considered by said process (Paragraphs.32 and 36) {This newly added

limitation adds nothing new to the claim language and is merely describing the obvious

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end result which happens when a domain is disqualified I.E considered unreachable in RIB}.

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the loopback address functionality as disclosed by Feldmann in the border gateway router disclosed by Pelvain in order to make the border gateway router more resilient resulting in a more stable and robust router that mitigates congestion.

5. As per claims 2, 9 & 16 Pelavin-Feldmann disclosed the system as recited in claim 1 wherein said route disqualification logic disqualifies all alternative routes to said domain if all of said nodes are indicated as reachable (Feldmann, paragraph.36).

6. As per claims 3, 4, 10, 19, 11 & 17 Pelavin-Feldmann disclosed the border gateway router as recited in Claim 15 wherein said route disqualification logic disqualifies alternative routes to said domain that pass through unreachable ones of said autonomous systems (Feldmann, paragraph.36).

7. As per claims 5, 12 & 18 Pelavin-Feldmann disclosed the system as recited in Claim 1 wherein said loopback addresses are distinguishable from ordinary network addresses (Feldmann, paragraph.30).

8. As per claims 6, 13 & 19 Pelavin-Feldmann disclosed the system as recited in Claim 5 wherein said loopback 2 addresses are formed in accordance with a Border Gateway Protocol extension (Feldmann, paragraph.36).

9. As per claims 7, 14 & 20 Pelavin-Feldmann disclosed the system as recited in claim 5 wherein said loopback addresses are assigned canonically (Feldmann, paragraph.24).

### ***Response to Arguments***

10. Applicant's arguments filed 1/10/2011 have been fully considered but they are not persuasive.

11. Applicant argued that neither Pelavin nor Feldmann fails to teach the limitation which states that “disqualifying alternative routes to said domain based on said indications prior to an alternative route convergence process”.

As to applicant's argument Feldmann discloses in paragraph36 that the Autonomous System (AS) {e.g. collection of routers etc} {before alternate route convergence} **first** learns about destination prefixes via dynamic routing protocols, such as BGP. BGP is a

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distance vector protocol that constructs paths by successively propagating routability information (I.E advertisements). Each BGP advertisement concerns a particular prefix and includes a list of ASes (nodes) along the path (paragraph.20 of applicant's specification). BGP policies can filter unwanted advertisements (I.E “disqualifying alternative routes”) and assign local preferences based on variety of attributes. AS may employ techniques such as route reflectors and confederation to avoid overhead.

Attributes include originating router of a BGP session and remote end point which can be identified by IP address which may correspond to a particular interface or Loopback address of a node (stated in the claim as one of the disqualification indication) “indication based on loopback addresses associated with the nodes”.

Examiner notes that this filtering (I.E disqualification) is done prior to selecting the best route. Only then (I.E after all the appropriate information is received and policies have been applied to the advertisements), the router executes the BGP decision process to select the best route as described in the claimed limitation.

Please read Paragraph.36 in light of the entire disclosure and common knowledge regarding the functions of “router” and the usage of “Loopback addresses”:

**[0035] BGP:**

**[0036]** The AS also learns about destination prefixes via dynamic routing protocols, such as BGP. BGP is a distance vector protocol that constructs paths by successively propagating reachability information. See, e.g., Y. Rekhter and T. Li, ed., "A Border Gateway Protocol 4 (BGP4)", RFC 1771, IETF Network Working Group, March 1995. Each BGP advertisement concerns a particular prefix and includes a list of ASes along the path, as well as other attributes. BGP advertisements are exchanged over BGP sessions between pairs of routers. The two ASes would typically establish a BGP session between the incident routers; these routers are BGP peers. The ISP employs local policies to select a route for each destination prefix, and to decide whether to advertise this route to neighboring ASes. BGP policies can filter unwanted advertisements and assign local preferences, based on a variety of attributes. Then, the router executes the BGP decision process to select the best route to each destination prefix. BGP export policies determine whether, and what, to advertise to each BGP peer. Interior BGP (iBGP) sessions are used to distribute this information inside the backbone. A large AS may employ techniques such as route reflectors or confederations to avoid the overhead of having an iBGP session for each pair of routers (i.e., a full iBGP mesh). Each BGP data object corresponds to one end point of a BGP session. The attributes include the originating router of the BGP session and the remote end point of the BGP session. The remote end point is identified by IP address which may correspond to a particular interface or

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the loopback address. A BGP object also has a remote AS, a peer group, a set of filter policies, and set of session attributes, capturing the various configurable parameters of a BGP session. The iBGP/eBGP flag distinguishes between interior and exterior sessions; a session with a remote end point inside the AS is classified as an iBGP session. The BGP data object also includes a set of interfaces that define how the router reaches the remote end point to exchange BGP messages. Interior BGP sessions rely on an intrado-main routing protocol (e.g., OSPF) to direct traffic to the remote end point. BGP sessions with other ASes usually depend on explicit configuration of a set of interfaces that can carry the traffic toward the remote end point. For example, the remote end point may be reachable via a directly-attached network. In other cases, the router could be configured with static routes that indicate how to direct traffic toward the remote end point.

12. Finally examiner advises the applicant to further narrow all the independent claims to overcome the prior art.

### ***Conclusion***

13. Applicant's future amendments need to comply with the requirements of MPEP § 714.02, MPEP § 2163.04 and MPEP § 2163.06.

"with respect to newly added or amended claims, applicant should show support in the original disclosure for the new or amended claims." See MPEP § 714.02 and § 2163.06 ("Applicant should \* \* \* specifically point out the support for any amendments made to the disclosure."); and MPEP § 2163.04 ("If applicant amends the claims and points out where and/or how the originally filed disclosure supports the amendment(s), and the examiner finds that the disclosure does not reasonably convey that the inventor had possession of the subject matter of the amendment at the time of the filing of the application, the examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims."). See *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) *In re Wertheim*, 541 F.2d at 262, 191 USPQ at 96 (emphasis added).

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"The use of a confusing variety of terms for the same thing should not be permitted.

New claims and amendments to the claims already in the application should be scrutinized not only for new matter but also for new terminology. While an applicant is not limited to the nomenclature used in the application as filed, he or she should make appropriate amendment of the specification whenever this nomenclature is departed from by amendment of the claims so as to have clear support or antecedent basis in the specification for the new terms appearing in the claims. This is necessary in order to insure certainty in construing the claims in the light of the specification." Ex parte Kotler, 1901 C.D. 62, 95 O.G. 2684 (Comm'r Pat. 1901). See 37 CFR 1.75, MPEP § 608.01 (i) and § 1302.01.

Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced."

"USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure." In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023,1027-28 (Fed. Cir. 1997). MPEP § 2106. "

The examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider each of the cited references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage disclosed by the examiner.



***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASGHAR BILGRAMI whose telephone number is (571)272-3907. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L.M. Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./

Examiner, Art Unit 2443

/PHUOC NGUYEN/

Primary Examiner, Art Unit 2443